

REMARKS

Reconsideration is respectfully requested.

Drawing Fig. 5

In response to the requirement in the Office Action, new Fig. 5 is submitted herewith illustrating an embodiment of the present invention including the claimed plurality of laser cavities connected in series. We further submit amendments to the text to incorporate reference to new Fig. 5 as outlined in the above amendments to the specification. It is respectfully submitted that no new subject matter has been added in making the amendment, it having been disclosed in the application as originally filed that the laser arrangement may comprise a number of distributed feedback regions connected in series (compare page 3, lines 14 to 20 and Claim 33, as originally filed).

Double patenting indication is incorrect

With respect to the advice that should Claim 77 be found allowable, Claim 89 will be objected to under 37 CFR §1.75 as being a substantial duplicate thereof, it is respectfully submitted that significant differences are present between these two claims.

Claim 77 is directed to a laser structure comprising, *inter alia*, a distributed feedback laser cavity, an optical signal redirecting element, and a saturable adsorption element.

Claim 89 is directed to a feedback device comprising, *inter alia*, an interconnecting element, an optical signal redirecting element, and a saturable absorption element. Most notably, therefore, Claim 89 does not include at least one element, a distributed feedback laser cavity. Therefore, it is respectfully submitted that the respective scopes of Claims 77 and 89 are not substantially identical so as to be subject to a double patenting rejection. Therefore,

reconsideration and withdrawal of the indication and anticipated objection of Claim 89 under 37 CFR §1.75 is respectfully requested.

The Amendments Overcome the Claim Objections

By the above amendment, Claims 77, 82, 83 and 89 have been amended to delete the term “in use” objected to in the Office Action. It is respectfully submitted that Claims 77, 82, 83 and 89, as amended, are now appropriately drafted as apparatus claims, and that these claim amendments have overcome the objection.

Claim rejections under 35 USC § 102(b) have been overcome

The rejection of Claims 69 to 80, and 82 to 89 as being anticipated by Scifres et al. (US Pat. No. 5,103,456) is respectfully considered to be improper.

Claim 69 includes, *inter alia*, the step of utilizing phase-discriminating properties of the induced saturable absorption grating in the optical path of the laser signal to reduce power fluctuations in an optical output of the laser cavity. It is respectfully submitted that Scifres et al. fail to disclose at least that feature of Claim 69.

More particularly, one of the essential features of the arrangement disclosed in Scifres et al. is that the laser cavity is isolated from any external, reflected signal portions. The Examiner’s attention is directed initially to column 5, lines 34 to 48, in which it is disclosed that the function of grating 17 is to isolate the amplifier 33, i.e., the amplifying medium 13, from the oscillator 11, i.e., the laser cavity from which the laser beam originates. Therefore, in relation to the embodiment shown in Fig. 8 of Scifres et al., the intensity modulation produced as a result of interference of the two plane waves going in opposite directions within amplifier section 13 is in fact inhibited from influencing, i.e.,

stabilizing, the actual laser cavity output. This is because of the optical isolation of the oscillator 11 by means of grating 17.

Significantly, and in-line with the above analysis, Scifres et al. merely discloses in column 6, line 65 to 67 that “this intensity modulation serves to stabilize the amplifier and keep it from filamentary operation.” (emphasis added). It is respectfully pointed out that a distinction is present between that statement i.e. Scifres et al., and the use of phase-discriminating properties of the induced saturable absorption grating in the present invention to reduce power fluctuations in the optical output of a laser cavity, i.e., the oscillator. In essence, where Scifres et al. merely seeks to stabilize the post amplifier, irrespective of any inherent fluctuations in the output from the master oscillator 11, the present invention stabilizes the actual laser cavity output, irrespective of whether or not that stabilized output is later post-amplified or not. Thus, not only does Scifres et al. fail to teach the claimed invention, Scifres et al. actually teach against Applicants’ inventions, as claimed.

Accordingly, it is respectfully submitted that Claim 69 is not anticipated by the disclosure in Scifres et al. Furthermore, similarly independent Claims 77 and 89, which each include the distinguishing feature discussed above with reference to Claim 69, are also not anticipated by the disclosure in Scifres et al.

Furthermore, it is respectfully submitted that Claims 70 to 76, and 78 to 88 meet the requirements of 35 USC § 102 as being dependent upon Claims 69 and 77 respectively, argued above to be allowable. In addition, each of Claims 70-76 and 78-88 contain additional limitations, which render the claims allowable separately from the independent claims on which they depend.

Claim Rejections under 35 USC § 103 have been Overcome

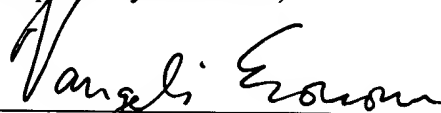
Claims 77, 78 and 81 were rejected as being unpatentable over Scifres et al. in view of Feuer (U.S. Pat. No. 6,078,597).

With reference to the arguments submitted above in response to the claim rejections under 35 USC § 102, it is further respectfully submitted that neither Scifres et al. nor Feuer disclose at least the feature of reduced power fluctuations in the optical output of a laser cavity through phase-discriminating properties of an inducted saturable adsorption grating in the optical path of the laser signal from the laser cavity.

Furthermore, there is no suggestion made or incentive given in any of those documents that would lead a person skilled in the art to arrive at the invention as claimed in Claim 77. Rather, as submitted above, a key emphasis in Scifres et al. is to isolate the laser cavity from any external, reflected signal portions, and consequently teaches away from the invention as now claimed. Therefore, it is respectfully submitted that it would not have been obvious to a person having ordinary skill in the art at the time the invention was made to arrive at the invention as now claimed in Claims 77 and 78 by any combination of the disclosures in Scifres et al. and Feuer.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter.

Respectfully submitted,



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